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ART UNIT	PAPER NUMBER
2665	7

DATE MAILED: 03/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

  A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 October 2000*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Claim Objections

1.   Claim 5 is objected to because of the following informalities: There is a

typographical error in line 2, "moduleis". Appropriate correction is required.

2.   Claim 18 is objected to because of the following informalities: The last line

of the claim is indefinite. There is no second–format header in the first–format

header. Appropriate correction is required.

3.   Claim 20 is objected to because of the following informalities: The

specification does not teach the "padding cells" as used in the line 4 for the claim.

Examiner suggest "padding bytes" in place of "padding cells". Appropriate

correction is required.

Claim Rejections - 35 USC § 102

4.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102

that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5.   Claim 1–5, 9–15, 18 and 23 are rejected under 35 U.S.C. 102(e) as being

anticipated by Scott (US Patent 6,512,773).

In regarding to claim 1, Scott teaches a convergence system for translating

data received in an ATM format into a MAC format, the convergence system

comprising: a network connection provisioning module configured to grant or

reject requests for a communication channel connection, which upon granting a

connection selects a compression method 204, from a plurality of selectable

compression methods, at least some of which include mapping ATM cell

addressing bits into MAC packet addressing fields (Figure 4A); an ATM

segmentation module configured to buffer data which is incoming on the granted

connection and to provide portions of the data to other modules, the portions

provided depending upon the selected compression method (Column 6 Line 33–

39); a MAC header module configured to derive a header for a MAC packet from

data in one or more incoming ATM cells having a common destination in

combination with connection parameters including any selected header

compression methods 206, 209; and a MAC reassembly module configured to

format data from the ATM segmentation module and the MAC header module into

an outgoing MAC data packet having a header and a payload which represents

incoming data from one or more ATM cells sharing a common destination 212.

In regarding to claim 2, Scott teaches the selectable compression methods

the MAC reassembly module is further configured to include payload data of a

plurality of ATM cells sharing a common destination in the payload of the outgoing MAC data packet and to remove any ATM header addressing data therefrom (Figure 4A).

In regarding to claim 3, Scott teaches the selectable compression methods the MAC reassembly module is further configured to include payload data of a plurality of ATM cells sharing a common destination in the payload of the outgoing MAC data packet and to remove all ATM header data therefrom (Figure 4A).

In regarding to claim 4, Scott teaches the selectable compression methods the MAC reassembly module is further configured to include payload data of a plurality of ATM cells sharing a common destination, and to encapsulate a fraction of ATM header addressing data from each of the plurality of ATM cells in the payload of the outgoing MAC data packet (Figure 4B).

In regarding to claim 5, Scott teaches the selectable compression methods the MAC reassembly module is further configured to include payload data of a plurality of ATM cells sharing a common destination and to encapsulate a virtual connection identifier from the header of each of the plurality of ATM cells along with the ATM payload data (Figure 4B).

In regarding to claim 9, Scott teaches a method for compressing and converting data packets initially in a first fixed-length packet format which are being converted to a second packet format prior to transmission through a link, the initial data packets each including a header containing overhead data added by a communication system, the method comprising the steps of: obtaining a plurality of incoming packets formatted in the first fixed-length format and having common header addressing data 202; preparing a second-format packet to convey payload data from the plurality of incoming packets by mapping the common addressing data into a header of the second-format packet 204, entering payload data from the plurality of incoming packets into a payload section of the second-format packet, and omitting the common addressing data from the payload of the second-format packet (Figure 4A).

In regarding to claim 10, Scott teaches the common addressing data includes all of the first-format header addressing data (Figure 4A).

In regarding to claim 11, Scott teaches the entire first-format header is mapped into the second-format header, and the entire first-format header is omitted from the second-format payload (Figure 4A).

In regarding to claim 12, Scott teaches a fraction of the first-format header addressing data of the incoming first-format packets is not common, and that

fraction from each incoming packet is encapsulated with payload data from the

incoming packet to form part of a payload of the second-format packets (Figure

4B).

In regarding to claim 13, Scott teaches the first-format packets are ATM

cells, the second-format packets are MAC packets, and the fraction of each ATM

cell header which is encapsulated with payload data from the ATM cell is a virtual

connection identifier (Figure 4B).

In regarding to claim 14, Scott teaches a fraction of the first-format header

addressing data of the incoming first-format packets which is common is disposed

one place within the second-format packet (Figure 4A).

In regarding to claim 15, Scott teaches the first-format packets are ATM

cells and the second-format packets are MAC packets (Column 7 Line 34–46).

In regarding to claim 18, Scott teaches a method for compressing data

packets which are initially in a first fixed-length packet format and are being

converted to a second packet format prior to transmission through a link, the initial

data packets each including user data intended for an end user and a header

containing overhead data added by a communication system which is not intended

for delivery to an end user, the method comprising the steps of obtaining one or

more incoming packets formatted in the first fixed-length format 202, each of the

incoming packets having identical headers (Figure 4A); preparing a second-format

packet to convey data from the one or more incoming packets by (a) mapping

first-format header overhead data into a header of the second-format packet 204;

(b) representing all user data from the one or more first-format packets in a

payload of the second-format packet (Figure 4A); and (c) omitting from the

second-format payload all first-format header data mapped into the second-format

packet header of the first-format header (Figure 4A).

In regarding to claim 23, Scott teaches a method for compressing data

packets which are initially in a first fixed-length packet format and are being

converted to a second packet format prior to transmission through a link, the initial

data packets each including a header containing overhead data added by a

communication system, the method comprising the steps of: determining, during

setup of a particular packet block transfer, whether virtual path or virtual

connection switching is required for the particular packet block transfer 204;

obtaining a plurality of incoming packets formatted in the first fixed-length format

202, each of the incoming packets having identical headers and constituting at least

part of the particular packet block transfer (Figure 4A); preparing a second-format

packet to convey data from the plurality of incoming packets by selecting,

dependent upon the type of switching required as established during block transfer

setup, either (a) mapping all header data from one of the first-format packet

headers into the second-format header, adding data reflective of all user data in the

first-format packets to a payload of the second-format packet, and omitting all

first-format header data from the payload of the second-format packet (Figure 4A),

or (b) mapping a portion of header data from one of the first-format packet headers

into the second-format header, omitting the mapped portion of header data from

other parts of the second-format packet, and placing data reflecting remaining

first-format header data along with payload data from each of the incoming packets

into a payload section of the second-format header (Figure 4B).

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for

all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

7.   Claim 6, 7, 16, 17, 19 and 20 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Scott in view of Mills et al. (US Patent 5,793,427).

In regarding to claim 6, 16 and 19, Scott teaches the selectable compression

methods the ATM segmentation module and subsequently to provide payload data

from the trailer cell to the MAC reassembly module (Figure 4A). Scott, however,

does not teach removing padding from an ATM trailer cell payload. Mills teaches

removing padding from an ATM trailer cell payload (Column 37 Line 5–10). It

would have been obvious to one skilled in the art to modify Scott to remove

padding as taught by Mills in order to use the bandwidth more efficiently.

In regarding to claim 7, 17 and 20, Scott teaches the selectable compression

methods the ATM segmentation module and subsequently to provide payload data

from the trailer cell to the MAC reassembly module (Figure 4A). Scott, however,

does not teach removing padding, CPCS and SSCS bytes from an ATM trailer cell

payload. Mills teaches removing padding, CPCS and SSCS bytes from an ATM

trailer cell payload (Column 37 Line 5–10). It would have been obvious to one

skilled in the art to modify Scott to remove padding, CPCS and SSCS bytes as

taught by Mills in order to use the bandwidth more efficiently.

8.   Claim 8 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Scott in view of Mills et al. and further in view of Regula (US Patent

6,400,682).

In regarding to claim 8, Scott in view of Mills et al. teaches the selectable

compression methods the ATM segmentation module removes padding from an

ATM trailer cell payload and to provide payload data from the trailer cell to the

MAC reassembly module. Scott in view of Mills, however, does not teach adding

a padding pattern byte representative of a pattern of the padding removed. Regula

teaches adding a padding pattern byte representative of a pattern of the padding

removed (Column 32 Line 24–39). It would have been obvious to one skilled in

the art to modify Scott in view of Mills to add a padding pattern byte as taught by

Regula in order to easily reconstruct ATM cells at the receiving node.

In regarding to claim 22, Scott teaches a method for compressing composite

data formatted in ATM cells prior to transmission over a broadband wireless link,

the composite data including user data intended for communication to an end user

and overhead data not intended for communication to the end user, the method

comprising the steps of: obtaining incoming composite data in a plurality of ATM

cells having a common destination 202 (Figure 4A); removing ATM cell header

overhead data common to the plurality of ATM cells to form header-reduced cell

data (Figure 4A); concatenating representations of header-reduced cell data from

each of the plurality of ATM cells to form a payload of a variable-length

transmission packet (Figure 4A). Scott, however, does not teach identifying and

removing padding bytes added to an ATM trailer cell which are overhead data.

Mills teaches identifying and removing padding bytes added to an ATM trailer cell

which are overhead data (Column 37 Line 5–10). It would have been obvious to

one skilled in the art to modify Scott to identify and remove padding bytes as

taught by Mills in order to use the bandwidth more efficiently. Scott, also, does

not teach adding an indication of the number of data bytes retained from the ATM

trailer cell. Regula teaches adding an indication of the number of data bytes

retained from the ATM trailer cell (Column 32 Line 24–39). It would have been

obvious to one skilled in the art to modify Scott in view of Mills to add an

indication of the number of data bytes retained from the ATM trailer cell as taught

by Regula in order to easily reconstruct ATM cells at the receiving node.

9.   Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over

Kokudo (US Patent 5,978,361) in view of Scott.

In regarding to claim 21, Kokudo teaches an apparatus for communicating

data between a plurality of users and a network, the apparatus comprising one or

more base stations, each base station including a network connection accepting

incoming data in packets from a wide area network in a first packet format (Figure

3); a transmission unit having a plurality of directional antennas 21, each antenna

sending and receiving radiofrequency communications with a plurality of

associated users within a directional sector served by the antenna, each user having

customer premise equipment complementary to the transmission unit (Figure 3); a

transmission controller 23 for directing transmission of data signals to each user;

and data receiving apparatus 33 associated with each user, the data receiving

apparatus: receiving the transmitted data signals (Figure 7). Kokudo, however,

does not teach a translation controller which reduces data from headers or from

trailers of the incoming packets in a process of translating the incoming data into a

second packet format, the second packet format being a variable length format and

does not teach the data receiving apparatus decoding the received data signals into

received data having the second packet format, reconstructing the received data

into the first packet format, and checking the reconstructed data for errors. Scott

teaches a translation controller which reduces data from headers or from trailers of

the incoming packets in a process of translating the incoming data into a second

packet format, the second packet format being a variable length format (Figure 5A)

and does not teach the data receiving apparatus decoding the received data signals

into received data having the second packet format, reconstructing the received

data into the first packet format , and checking the reconstructed data for errors

(Figure 5B). It would have been obvious to one skilled in the art to modify

Kokudo to translate data into more compact format and reconstruct at the receiving

end as taught by Scott in order to use the bandwidth more efficiently.

Conclusion

10.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure. The following patents are cited to further show the state of

the art with respect to the ATM in general.

U.S. Patent 6,151,318 to Woodward et al.

U.S. Patent 5,905,727 to Christensen et al.

U.S. Patent 5,910,954 to Bronstein et al.

U.S. Patent 6,389,038 to Goldberg et al.

U.S. Patent 6,618,397 to Huang

U.S. Patent 6,590,897 to Lauffenburger et al.

U.S. Patent 5,615,210 to Kaiyama et al.

U.S. Patent 6,256,323 to Benayoun et al.

U.S. Patent 5,717,689 to Ayanoglu et al.

11.   Any inquiry concerning this communication or earlier communications from

the examiner should be directed to Clemence Han whose telephone number is

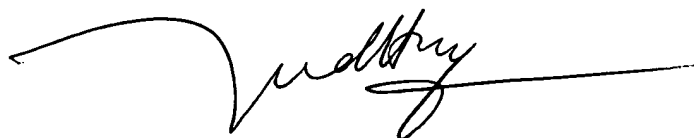(703) 305-0372. The examiner can normally be reached on Monday-Friday 8 to 5.

If attempts to reach the examiner by telephone are unsuccessful, the

examiner's supervisor, Huy Vu can be reached on (703) 308-6602. The fax phone

number for the organization where this application or proceeding is assigned is

703-872-9306.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR

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direct.uspto.gov. Should you have questions on access to the Private PAIR system,

contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

C. H

Clemence Han
Examiner
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